



RECEIVED

NOV 25 2002

SEQUENCE LISTING

TECH CENTER 1600/2900

<110> KIM, Sun-Young
KIM, Kee-Won
KIM, Tae-Han
HWANG, Jeong-Ho
KIM, Seon-Hee
LEE, Sun-Young

<120> Heterologous Protein Production System using Avian Cells

<130> 003364.P001

<140> US 09/029,042

<141> 1998-05-15

<150> KR 10-1995-26391

<151> 1995-08-24

<150> PCT/KR96/00145

<151> 1996-08-23

<160> 15

<170> KopatentIn 1.71

H)

<210> 1
<211> 1585
<212> DNA
<213> Homo sapiens

<400> 1

atgggggtgc acgaatgtcc tgcctggctg tggcttctcc tgcctcgct gtcgctccct	60
ctgggcctcc cagtcctggg cgccccacca cgcctcatct gtgacagccg agtcctggag	120
agtacacctc tggaggccaa ggaggccgag aatatcacgg tgagaccct tcccagcac	180
attccacaga actcacgctc agggcttcag ggaactcctc ccagatccag gaacctggca	240
cttgggttgg ggtggagttt ggaagctaga cactgcccc ctacataaga ataagtctgg	300
tggcccaaaa ccatacctgg aaactaggca aggagcaaag ccagcagatc ctacggcctg	360
tgggccaggg ccagagcctt cagggaccct tgactcccg ggctgtgtgc atttcagacg	420
ggctgtgctg aacactgcag cttgaatgag aatatcactg tcccagacac caaagttaat	480
ttctatgcct ggaagaggat ggaggtgagt tcctttttt tttttttcc ttcttttg	540
agaatctcat ttgcgagcct gatTTGGAT gaaAGGGAGA atgatcgggg gaaaggtaaa	600
atggagcagc agagatgagg ctgcctggc gcagaggctc acgtctataa tcccaggctg	660
agatggccga gatggagaa ttgcttgagc cctggagggtt cagaccaacc taggcagcat	720
agttagatcc cccatctcta caaacattta aaaaaattag tcaggtgaag tggcgtatgg	780
tggtagtccc agatatttgg aaggctgagg cgggaggatc gcttggcccc aggaatttga	840
ggctgcagtg agctgtgatc acaccactgc actccagcct cagtgcacaga gtgaggccct	900
gtctcaaaaa agaaaagaaa aaagaaaaat aatgagggtt gtatgaaata cattcattat	960
tcattcactc actcactcac tcattcatc attcattcat tcaacaagtc ttattgcata	1020
ccttctgttt gctcagctt gtcctgggg ctgctgaggg gcaggaggga gagggtgaca	1080
tgggtcagct gactcccaga gtccactccc ttaggtcgg gcagcaggcc gtagaagtct	1140
ggcaggccctt ggcctgctg tcggaagctg tcctgcgggg ccaggccctg ttggtcaact	1200

cttcccagcc	gtgggagccc	ctgcagctgc	atgtggataa	agccgtcagt	ggccttcgca	1260
gcctcaccac	tctgcttcgg	gctctggag	cccaggttag	taggagcgga	cacttctgct	1320
tgcctttct	gtaagaagggg	gagaagggtc	ttgctaagga	gtacaggaac	tgtccgtatt	1380
ccttccctt	ctgtgcact	gcagcgacct	cctttttct	ccttggcaga	aggaagccat	1440
ctcccccca	gatgcggcct	cagctgctcc	actccgaaca	atcactgctg	acactttccg	1500
caaacttttc	cgagttact	ccaatttcct	ccggggaaag	ctgaagctgt	acacagggga	1560
ggcctgcagg	acaggggaca	gatga				1585

<210> 2
<211> 1583
<212> DNA
<213> Homo sapiens

<400> 2

atgggggtgc	acgaatgtcc	tgccctggctg	tggcttctcc	tgtccctgct	gtcgctccct	60
ctgggcctcc	cagtcctggg	cgccccacca	cgcctcatct	gtgacagccg	agtccctggag	120
agttacctct	tggaggccaa	ggaggccgag	aatatcacgg	tgagaccctt	tcccccagcac	180
attccacaga	actcacgctc	agggcttcag	gcaactcctc	ccagatccag	gaacctggca	240
cttggtttgg	ggtggagttg	ggaagctaga	caactgcccc	ctacataaga	ataagtctgg	300
tggccccc	ccatacctgg	aaacttaggca	aggagcaaag	ccagcagatc	ctacgcctgt	360
ggccaggggcc	agagcctta	gggacccttg	actccccggg	ctgtgtgcat	ttcagacggg	420
ctgtgctgaa	caactgagct	tgaatgagaa	tatcactgtc	ccagacacca	aagttaaattt	480
ctatgcctgg	aagaggatgg	aggtgagttc	ctttttttt	tttttcctt	tcttttggag	540
aatctcattt	gcgagcctga	ttttggatga	aaggagaat	gatcgaggga	aaggtaaaat	600
ggagcagcag	agatgaggct	gcctgggcbc	agaggctcac	gtctataatc	ccaggctgag	660
atggccgaga	tgggagaatt	gcttgagccc	tggaggttca	gaccaaccta	ggcagcatag	720
ttagatcccc	catctctaca	aacatttaaa	aaaatttagtc	aggtgaagtg	gtgcattgg	780
gtagtcccag	atatttggaa	ggctgaggcg	ggaggatcgc	ttgagccca	gaatttgagg	840
ctgcagtgag	ctgtgatcac	accactgcac	tccagcctca	gtgacagagt	gaggccctgt	900
ctcaaaaaaaag	aaaagaaaaaa	agaaaaataa	tgagggctgt	atgaaatacg	ttcattattc	960
attcactcac	tcactcactc	attcattcat	tcattcattc	aacatgtctt	attgcatacc	1020
ttctgtttgc	tcagcttgg	gcttggggct	gctgaggggc	aggagggaga	gggtgacatc	1080
cctcagctga	ctcccaagagt	ccactccctg	tagtcgggc	agcaggccgt	agaagtctgg	1140
cagggcctgg	ccctgctgtc	ggaagctgtc	ctgcggggcc	aggccctgtt	ggtaactct	1200
tcccagccgt	gggagccct	gcagctgcat	gtggataaag	ccgtcagtg	ccttcgcagc	1260
ctcaccactc	tgcttcgggc	tctgggagcc	caggtgagta	ggagcggaca	cttctgcttg	1320
cccttctgt	aagaagggga	gaagggtctt	gctaaggagt	acaggaactg	tccgtattcc	1380
ttccctttct	gtggcactgc	agcgacctcc	tgtttctcc	ttggcagaag	gaagccatct	1440
cccccctccaga	tgccggctca	gctgctccac	tccgaacaat	caactgctgac	acttccgca	1500
aactcttccg	agtctactcc	aatttcctcc	ggggaaagct	gaagctgtac	acaggggagg	1560
cctgcaggac	aggggacaga	tga				1583

<210> 3
<211> 1585
<212> DNA
<213> Homo sapiens

<400> 3

atgggggtgc	acgaatgtcc	tgccctggctg	tggcttctcc	tgtccctgct	gtcgctccct	60
ctgggcctcc	cagtcctggg	cgccccacca	cgcctcatct	gtgacagccg	agtccctggag	120
agttacctct	tggaggccaa	ggaggccgag	aatatcacgg	tgagaccctt	tcccccagcac	180
attccacaga	actcacgctc	agggcttcag	gcaactcctc	ccagatccag	gaacctggca	240

cttggtttgg	ggtggagttg	ggaagctaga	cactgcccc	ctacataaga	ataagtctgg	300
tggcccaaa	ccatacctgg	aaacttagga	aggagcaaag	ccagcagatc	ctacggcctg	360
tgggccagg	ccaaaacctt	cagggaccct	tgactcccc	ggctgttgc	atttcagacg	420
ggctgtgctg	aacactgcag	cttgaatgaa	aatatcactg	tcccagacac	caaagttaat	480
ttctatgcct	ggaagaggat	ggaggtgagt	tcctttttt	tttttttcc	tttctttgg	540
agaatctcat	ttgcgagcct	gattttggat	gaaagggaga	atgatcgagg	gaaaggtaaa	600
atggagcagc	agagatgagg	ctgcctggc	gcagaggctc	acgtctataa	tcccaggctg	660
agatggccga	aatgggagaa	ttgcttgagc	cctggaggtt	cagaccaacc	tagcagcat	720
agtgagatcc	cccatctcta	caaacattta	aaaaaaattag	tcaggtgaag	tggtcatgg	780
tgttagtccc	agatatttgg	atggctgagg	cgggaggatc	gcttgagccc	aggaatttga	840
ggctgcagtg	agctgtgatc	acaccactgc	actccagcct	cagtgcacaga	atgaggccct	900
gtctcaaaaa	agaaaagaaa	aaagaaaaat	aatgagggct	gtatggaata	cattcattat	960
tcattcactc	actcactcac	tcatccattc	attcattcat	tcaacaagtc	ttattgcata	1020
ccttctgttt	gctcagctt	gtgctcggg	ctgctgaggg	gcaggaggg	gagggtgaca	1080
tgggtcagct	gactcccaga	gtccactccc	tgtaggtcgg	gcaacagggcc	gtagaagtct	1140
ggcagggcct	ggccctgctg	tcggaagctg	tcctgcgggg	ccaggccctg	ttggtcaact	1200
tttcccagcc	gtgggagccc	ctgcagctc	atgtggataa	agccgtcagt	gcccctcgca	1260
gcctcaccac	tctgcttcgg	gctctggag	cccaggtgag	taggagcgg	cacttctgct	1320
tgccctttct	gtaagaaggg	gagaagggtc	ttgctaagga	gtacaggaac	tgtccgtatt	1380
ccttccctt	ctgtggcact	gcagcgaccc	cctgtttct	ccttggcaga	aggaagccat	1440
ctcccccctca	gatgcggcct	cagctgctcc	actccgaaca	atcaactgctg	acactttccg	1500
caaactcttc	cgagctact	ccaatttcc	ccggggaaag	ctgaagctgt	acacagggga	1560
ggcctgcagg	acaggggaca	gatga				1585

H1
<210> 4
<211> 1586
<212> DNA
<213> Homo sapiens

<400>	4					
atgggggtgc	acgaatgtcc	tgccctggctg	tggcttctcc	tgtccctgct	gtcgctccct	60
ctgggcctcc	cagtctggg	cgccccacca	cgcctcatct	gtgacagccg	agtccctggag	120
agttacctct	tggaggccaa	ggaggccgag	aatatcacgg	tgagaccct	tcccagcac	180
attccacaga	actcacgctc	agggcttcag	gcaactcctc	ccagatccag	gaacctggca	240
cttggtttgg	ggtggagttg	ggaagctaga	cactgcccc	ctacataaga	ataagtctgg	300
tggcccaaa	ccatacctgg	aaacttagga	aggagcaaag	ccagcagatc	ctacggcctg	360
tggccaggg	ccaggagcct	tcagggacc	ttgactcccc	gggctgtgt	catttcagaa	420
ggctgtgct	gaacactgca	gcttgaatga	aatatca	gtcccagaca	ccaaagttaa	480
tttctatgcc	tggaaagagga	tggaggtgag	ttcctttttt	tttttttcc	ctttcttttg	540
gagaatctca	tttgcagcc	tgattttgga	tgaaaagggag	agtatcgag	ggaaaggtaa	600
aatggagcag	cagagatgag	gctgcctggg	cgcagaggct	cacgtctata	atcccaggct	660
gagatggccg	agatggaga	attgcttgag	ccctggaggt	tcagaccaac	ctagggcagca	720
tagtgagatc	ccccatctct	acaaacattt	aaaaaaatta	gtcaggtgaa	gtggtgcatt	780
gtggtagtcc	cagatattt	gaaggctgag	gcgggaggat	cgcttgagcc	caggaatttgc	840
agctgcgg	gagctgtgat	cacaccactg	cactccagcc	tcagtgcacag	agtggggccc	900
tgtctcaaaa	aaagaaaagaa	aaaagaaaaaa	taatgagggc	tgtatggaat	acattcatta	960
ttcattcact	cactcactca	ctcattcatt	cattcattca	ttcaacaagt	cttattgcatt	1020
acttctgtt	tgctcagctt	ggtgcttggg	gctgctgagg	ggcaggaggg	tgagggtgac	1080
atgggtcagc	tgactccag	agtccactcc	ctgttggcg	ggcagcaggcc	cgtagaagtc	1140
tggcagggcc	tggccctgct	gtcggaaagct	gtcctgcggg	gccaggccct	gttggtcaac	1200
tcttcccagc	cgtgggagcc	cctgcagctg	catgtggata	aagccgtcag	tggccttcgc	1260
acgctcacca	ctctgcttcg	ggctctggga	gcccaggtga	gtaggagcgg	acacttctgc	1320
ttccctttc	tgtaaaggaa	ggagaagggt	cttgctaagg	agtacaggaa	ctgtccgtat	1380

tcctccctt	tctgtggcac	tgcagcgacc	tcctgtttc	tcctggcag	aaggaagcca	1440
tctcccctcc	agatcgccc	tcagctgctc	cactccgaac	aatcactgct	gacactttcc	1500
gcaaactctt	ccgagctac	tccaatttcc	tccggggaaa	gctgaagctg	tacacagggg	1560
aggcctgcag	gacaggggac	agatga				1586

<210> 5
<211> 1583
<212> DNA
<213> Homo sapiens

<400> 5

atgggggtgc	acgaatgtcc	tgcctggctg	tggcttctcc	tgtccctgct	gtcgctccct	60
ctgggcctcc	cagtccctggg	cgcggccacca	cgcctcatct	gtgacagacg	agtccctggag	120
agtacactct	tggaggccaa	ggaggcccag	aatatcacgg	tgagaccctt	tccccagcac	180
atccacaga	actcacgctc	agggcttcag	gcaactcctc	ccagatccag	gaacctggca	240
cttgggttgg	ggtggagttg	ggaagctaga	cactgcccc	ctacataaga	ataagtctgg	300
tggccccc	ccataacctgg	aaactaggca	aggagcaaag	ccagcagatc	ctacggcctg	360
tggccaggg	gcagagcctt	cagggacctt	tgactcccc	ggctgtgtgc	attcagacg	420
ggctgtgtc	aacactgcag	tttgaatgag	aatatcaactg	tcccagacac	caaagttaat	480
ttctatgcct	ggaagaggat	ggaggtgagt	tcctttttt	tttttcctt	tctttggag	540
aatctcattt	gcfagcctga	ttttggatga	aaggagaat	gatcgaggg	aagtaaaat	600
ggagcagcag	agatgaggct	gcctgggcgc	agaggtcac	gtctataatc	ccaggcttag	660
acggccgaga	tgggagaatt	gcttgagccc	tggaggttca	gaccaaccta	ggcagcatag	720
ttagatcccc	catctctaca	aacatttaaa	aaaattagtc	aggtgaagt	gtgcattgg	780
gtagtccca	atattggaa	ggctgaggcg	ggaggatcgc	ttgagccag	gaatttgggg	840
ctgcagttag	ctgtgatcac	accactgcaa	tccagcctca	gtgacagagt	gagccctgt	900
ctcaaaaacg	aaaagaaaaa	agaaaaataa	tgagggctgt	atgaaataca	ttcattattc	960
attcactcac	tcactcactc	attcattcat	tcattcattc	aacaagtctt	attgcatacc	1020
ttctgtttgc	tcagcttgg	gcttgggc	tctgaggggc	aggagggaga	gggtgacatg	1080
ggtcagctga	ctcccagagt	ccactccctg	tagtcgggc	agcaggccgt	agaagtctgg	1140
cagggcctgg	ccctgctgtc	gaaatctgtc	ctgcccccc	aggccctgtt	ggtcaactct	1200
tcccaaccgt	gggagccctt	gcagctgcat	gtggataaaag	ccgtcagtt	ccttcgcagc	1260
ctcaccactc	tgcttcgggc	tctggagcc	cagttgagta	ggaggggaca	cttctgcttg	1320
cccttgggt	aagaaggaga	gaaggggttt	gctaaggagt	acaggaactg	tccgtattcc	1380
ttccctttct	gtggcaactgc	agcgacctcc	tgtttctcc	ttggcagaag	gaagccatct	1440
cccctccaga	tgcggcctca	gctgctccac	tccgaacaat	caactgctgt	actttccgca	1500
aactcttccg	agtctactcc	aatttcttcc	ggggaaagct	gaagctgtac	acaggggagg	1560
cctgcaggac	aggggacaga	tga				1583

<210> 6
<211> 1587
<212> DNA
<213> Homo sapiens

<400> 6

atgggggtgc	acgaatgtcc	tgcctggctg	tggcttctcc	tgtccctgct	gtcgctccct	60
ctgggcctcc	cagtccctggg	cgcggccacca	cgcctcatct	gtgacagccg	agtccctggag	120
agtacactct	tggaggccaa	ggaggcccag	aatatcacgg	tgagaccctt	tccccagcac	180
atccacaga	actcacgctc	agggcttcag	gcaactcct	cccaggatcc	aggaacctgg	240
cacttgggtt	gggggtggagt	tgggaagcta	gacactgccc	ccctacataa	gaataagtct	300
gtgtggccca	aaccataacct	ggaaactagg	caaggagcaa	agccagcaga	tcctacggcc	360
tgtggccag	ggccagagcc	ttcagggacc	cttgcactccc	cggtctgtgt	gcattccaga	420

cgggctgtgc	tgaacactgc	agcttgaatg	agaatatcac	tgtcccagac	accaaagtta	480
atttctatgc	ctggaaaggagg	atggaggtga	gttccttttt	tttttttttt	cctttctttt	540
ggagaatctc	atttgcgagc	ctgatttggg	atgaaaaggga	gaatgatcga	gggaaaggta	600
aaatggagca	gcagagatga	ggctgcctgg	gcgcagaggc	tccagtctat	aatcccaggc	660
tgagatggcc	gagatgggag	aattgcttga	gccctggagg	ttcagaccaa	cctaggcagc	720
ctagtgagat	cccccatctc	tacaaacatt	taaaaaaatt	agtcaggtga	agtgggtgcat	780
ggtgttagtc	ccagatattt	gaaaggctga	ggcgggagga	tcgcttgagc	ccaggaattt	840
gaggctgcag	tgagctgtga	tcacaccact	gcactccagc	ctcagtgaca	gagtgaggcc	900
ctgtctcaaa	aaagaaaaga	aaaaagaaaa	attatgaggg	ctgtatgaa	tacattcatt	960
attcattcac	tcactcactc	actcattcat	tcattcattc	attcaacaag	tcttattgca	1020
tacccctctgt	ttgctcagct	tggtgcttgg	ggctgctgag	gggcaggagg	gagagggtga	1080
catgggtcaa	ctgactccca	gagtccactc	cctgtaggc	gggcagcagg	ccgtagaagt	1140
ctggcagggc	ctggccctgc	tgtcggaagc	tgtcctgcgg	ggccaggccc	tgttggtcaa	1200
ctcttccag	ccgtgggagc	ccctgcagct	gcatgtggat	aaagccgtca	gtggccttcg	1260
cagcctcacc	actctgcctc	gggctctggg	agccaggtg	agtaggagcg	gacacttctg	1320
cttgccctt	ctgtaagaag	gggagaaggg	tcttgctaag	gagtacagga	tctgtccgta	1380
ttccttccct	ttctgtggca	ctgcagcgcac	cacctgtttt	ctccttgca	gaaggaagcc	1440
atctcccctc	catatgcggc	ctcagctgct	ccactccgaa	caatcaactgc	tgacactttc	1500
cggaaactct	tccgagtcta	ctccaaattt	ctccggggag	agctgaagct	gtacacaggg	1560
gaggcctgca	ggacagggga	cgatga				1587

<210> 7
<211> 193
<212> PRT
<213> Homo sapiens

<400> 7

H) Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Ser Leu
1 5 10 15
Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
20 25 30
Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
35 40 45
Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
50 55 60
Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
65 70 75 80
Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
85 90 95
Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
100 105 110
Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
115 120 125
Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
130 135 140
Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
145 150 155 160
Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Val Ser Asn Phe Leu
165 170 175
Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
180 185 190
Arg

<210> 8
<211> 193
<212> PRT
<213> Homo sapiens

<400> 8

Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Ser Leu
1 5 10 15

Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
20 25 30

Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
35 40 45

Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
50 55 60

Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
65 70 75 80

Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
85 90 95

Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
100 105 110

Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
115 120 125

Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
130 135 140

Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
145 150 155 160

Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Val Ser Asn Phe Leu
165 170 175

Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
180 185 190

Arg

H1

<210> 9
<211> 193
<212> PRT
<213> Homo sapiens

<400> 9

Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Ser Leu
1 5 10 15

Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
20 25 30

Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
35 40 45

Ala Glu Asn Ile Thr Lys Gly Cys Ala Glu His Cys Ser Leu Asn Glu
50 55 60

Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
65 70 75 80

Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
85 90 95

Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
100 105 110

Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
115 120 125
Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
130 135 140
Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
145 150 155 160
Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
165 170 175
Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
180 185 190
Arg

<210> 10
<211> 193
<212> PRT
<213> Homo sapiens

H) <400> 10
Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Ser Leu
1 5 10 15
Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
20 25 30
Ile Cys Asp Arg Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
35 40 45
Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
50 55 60
Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
65 70 75 80
Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
85 90 95
Leu Ser Glu Ser Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
100 105 110
Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
115 120 125
Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
130 135 140
Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
145 150 155 160
Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
165 170 175
Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
180 185 190
Arg

<210> 11
<211> 193
<212> PRT
<213> Homo sapiens

<400> 11
Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Ser Leu
1 5 10 15

Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
20 25 30
Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
35 40 45
Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
50 55 60
Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
65 70 75 80
Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
85 90 95
Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
100 105 110
Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
115 120 125
Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
130 135 140
Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
145 150 155 160
Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
165 170 175
Arg Gly Glu Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
180 185 190
Gly

H
<210> 12
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer specific to EPO gene

<400> 12
gaagctgata agctgataac c

21

<210> 13
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> primer specific to EPO gene

<400> 13
tgtgacatcc ttagatctca

20

<210> 14
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> primer specific to EPO gene

<400> 14

caagcttcgg agatgggtg cacgaatgtc ctgcctggct gtggc

45

<210> 15

<211> 27

<212> DNA

<213> Artificial Sequence

H) <220>

<223> primer specific to EPO gene

<400> 15

caagctttca tctgtccctt gtcctgc

27